ENVIRONMENTAL
Fact Sheet

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

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A Quick Reference Guide to Sanitary Surveys

What Is a Sanitary Survey?

A sanitary survey is used to identify existing or potential contaminants to a water body. Normally the contaminants of concern are pathogenic organisms known to cause a variety of human diseases. Sanitary surveys may be used by public health officials, beach managers, shellfishing regulators, and any organization requiring detailed information on potential bacterial pollution sources to surface waters.

Pawtuckaway State Park Beach Area, Nottingham, NH

The sanitary survey provides information on the overall condition of the watershed and makes recommendations for improving water quality. This information can then be used to design site specific monitoring programs and initiate pollution source remediation efforts. Sanitary surveys consist of three main components:

1. **Point Source Identification:** A lot by lot survey surrounding the area of concern. The survey should contain information on land usage, sewage disposal, and identify point sources of potential pollutants.
2. **Ambient Water Quality Monitoring:** The water quality of the area of concern is monitored by collecting water samples on a regular basis. Water samples are also collected from potential pollution sources to assess their impact on the area.
3. **Hydrographic, Meteorological and Other Studies:** After the pollution sources have been correctly identified, further studies are done to understand how the contaminants affect the surrounding area.

When Should a Sanitary Survey be Conducted?

Sanitary surveys should be conducted when high levels of contamination are present or suspected and the source of contamination is unknown. They should also be conducted when significant changes in land use, construction, or development of the area is proposed. Possible sources of contamination that would warrant a sanitary survey are:

Little River Discharge,
North Hampton, NH

Sewage spills from sewer collection systems and pump stations

- Faulty septic systems
- Agriculture
- Non-point source contamination from residential or commercial development.

How to Conduct a Sanitary Survey

To begin your own sanitary survey, remember to follow these four steps: plan the survey, conduct the survey and site visit, compile the report, review and respond to the reports. To conduct the sanitary survey the following five areas must be evaluated.

1. **Rainfall and climate:** Bacterial contamination is highest after rainfall when runoff carries the fecal material to surface waters. Identifying annual rainfall, rainfall amounts in the 30 days prior to the survey, and the number of events where greater than 1 inch of rain fell in 24 hours is recommended. Identifying terrain and soil permeability that will affect the runoff rate, and identifying temperature patterns during the time of concern will aid in the survey. Pathogens tend to persist longer in warmer temperatures.
2. **Water flow:** Areas with more water movement tend to have less contamination while areas with little or no flow will have higher concentrations. Measuring water flow and movement in the area of concern is important during sanitary surveys.
3. **Sources of pollution in the watershed:** Pollution sources close to the area of concern that occur frequently have a greater impact than those far away occurring less often. Refer to the above list of potential sources of contamination to aid in identifying sources to the area.
4. **Water treatment level:** If a permitted discharge exists in the area, evaluate the level of water treatment as primary, secondary, or tertiary treatment. Identify any other pollution prevention efforts in the surrounding area.
5. **Sources of pollution in the area of concern:** The amount of human and animal fecal pollution should be determined. Examine sanitary facilities at the site as well as failing septic systems, pleasure crafts with toilets, marinas, and animal fecal contamination in the area.

How to Assemble the Reports

Sanitary survey reports should be consistent and typically contain the following recommended sections by The National Shellfish Sanitation Program:

- **Executive Summary:** Identify the area and describe historical water quality.
- **Pollution Source Survey:** Identify all pollution sources and evaluate their significance.
- **Physical Factors:** Identify factors that affect distribution and concentration of microorganisms and microbial water quality.
- **Hydrographic and Meteorological Characteristics:** Describe these factors and affects on transport of pollution to the area.

- **Water Quality Studies:** Include all sampling data and related plans, data explanations, conclusions, and bacterial loading due to hydrographic and meteorological conditions.
- **Recommendations:** Conclude with recommendations on how to remediate the problem.

For more information, contact Sara Sumner, DES Beach Program, (603) 271-8803, ssumner@des.state.nh.us.

References

USEPA. 2002. *National Beach Guidance and Required Performance Criteria for Grants.* EPA-823-B-02-004. U.S. Environmental Protection Agency, Office of Water, Washington, DC.